(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
5 April 2001 (05.04.2001)

PCT

(10) International Publication Number
WO 01/24234 A2

(51) International Patent Classification[7]: H01L 21/00

(21) International Application Number: PCT/US00/27139

(22) International Filing Date:
28 September 2000 (28.09.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/408,281 29 September 1999 (29.09.1999) US

(71) Applicant: LAM RESEARCH CORPORATION [US/US]; 4650 Cushing Parkway, Fremont, CA 94538 (US).

(72) Inventors: MIKHAYLICH, Katrina, A.; 1809 Willow Lake Lane, San Jose, CA 95131 (US). RAVKIN, Mike; 1215 West Knickerbocker Drive, Sunnyvale, CA 94087 (US).

(74) Agent: PENILLA, Albert, S.; Martine Penilla & Kim LLP, Suite 170, 710 Lakeway Drive, Sunnyvale, CA 94085 (US).

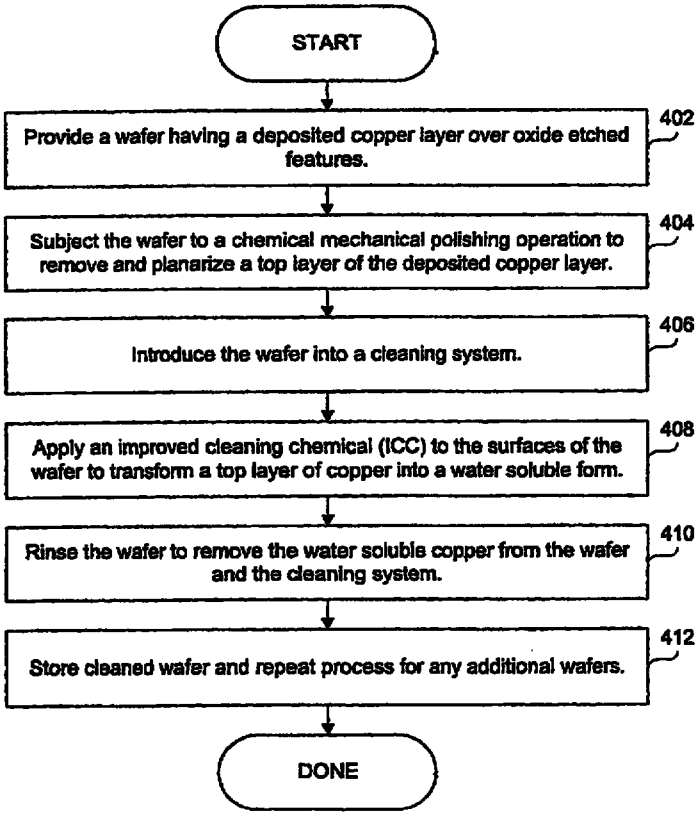
(81) Designated States *(national)*: CN, IL, JP, KR, SG.

(84) Designated States *(regional)*: European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published:
— *Without international search report and to be republished upon receipt of that report.*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A METHOD FOR CLEANING AND TREATING A SEMICONDUCTOR WAFER AFTER CHEMICAL MECHANICAL POLISHING



(57) Abstract: A method is provided for cleaning a surface of a semiconductor wafer after a CMP operation. In one example, an improved cleaning chemical (ICC) is applied to the surface of the wafer. The ICC is configured to transform a copper film on the surface of the wafer into a water soluble form. The wafer surface is scrubbed. The wafer is then rinsed with a liquid. The scrubbing and the rinsing are configured to remove a controlled amount of the water soluble copper from the surface of the wafer and the brush, wherein the applying, the scrubbing, and the rinsing are performed in a brush box.

WO 01/24234 A2